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Edwin C. Iliff

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EXAMINER

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ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/785,044	ILIFF, EDWIN C.	
	<b>Examiner</b>	<b>Art Unit</b>	
	SRIRAMA CHANNAVAJJALA	2157	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 March 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

**Response to Amendment**

1. Examiner acknowledges applicants' amended claims 1,6,7,9, 11 filed on 3/22/2011.
2. ***"Decision on Appeal" mailed on 3/23/2010.***
3. ***Decision on request for rehearing mailed on 8/11/2010***
4. Claims 1-56 are pending in this application.
5. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114 filed on 3/23/2009. Applicant's submission filed on 9/29/2010 has been entered
6. Examiner acknowledges applicant **amended claims 1,6,9,11 and added new claims 53-56** filed on 9/29/2010.

**Drawings**

7. The Drawings filed on 2/14/2001 are acceptable for examination purpose

**Priority**

8. Acknowledgment is made of applicant's claim for domestic priority application # **60182176**, **filed 02/14/2000** under 35 U.S.C. 119(e).

***Information Disclosure Statement***

9. The information disclosure statement filed on 11/2/2010;6/21/2010;3/12/2010;11/19/2009;6/25/2009;6/15/2009;1/16/2009 is in compliance with the provisions of 37 CFR 1.97, and has been considered and a copy was enclosed with previous Office Action
10. The information disclosure statement filed on 5/9/2008 is in compliance with the provisions of 37 CFR 1.97, and has been considered and a copy was enclosed with previous Office Action.
11. Applicant is reminded that an applicant's duty of disclosure of material and information is not satisfied by presenting a patent examiner with 'a mountain of large information disclosure (material) from which he/she is presumed to have been able, with his/her expertise. Applicant is reminded that an applicant's duty of disclosure of material and with adequate time, to have found the critical (material). It ignores the real world conditions under which examiners work. Rohm & Haas Co. v. Crystal Chemical Co., 722 F.2d 1556 (220 USPQ 289) (Fed. Cir. 1983), cert denied 469 U.S. 851 (1984). (Emphasis in original). ***Patent applicant has a duty not just to disclose pertinent prior art references but to make a disclosure in such way as not to 'bury" it within other disclosures of less relevant prior art***; See Golden Valley Microwave Foods Inc. V Weaver Popcorn Co. Inc, 24 USPQZd 1801 (N.D. Ind. 1992)., Molins PLC v. Textron Inc., 26 USPQZd 1889, at 1889 (D.Del. 1992)\*, Penn Yan Boats, Inc. F. Sea Lark 8oals, Inc et al. 175 USPQ 260, at 272 (S.D.FI. 1972).

Eliminate clearly irrelevant and marginally pertinent cumulative information. If a

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long list is submitted, highlight those documents which have been specifically brought to applicant's attention and/or are known to be of most significance. See *Penn Yan Boats, Inc. v. Sea Lark Boats, Inc.*, 359 F. Supp. 948, 175 USPQ 260 (S.D. Fla. 1972), *aff'd*, 479 F.2d 1338, 178 USPQ 577 (5th Cir. 1973), *cert. denied*, 414 U.S. 874 (1974). But cf. *Molins PLC v. Textron Inc.*, 48 F.3d 1172, 33 USPQ2d 1823 (Fed. Cir. 1995).

Please note that it is the applicant's duty to particularly point out any **highly** **relevance** material amongst the references cited in the IDS filed on 9/8/2008.

The examiner under the condition noted above performed a cursory review of the submitted references.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-56 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1 and 11 [as amended 3/22/2011] directed to a method of implemented as a set of instructions executed by a computing device.....reuse of medical script objects. This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a

result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for a final result of the method of reuse of medical script objects. This produced result remains in the abstract, and thus, fails to achieve the required status of having real world value. Claims 2-5, 12-19, 43-48, 52-53, and 56 are likewise rejected.

It is further noted that claims 1,11 as amended 3/22/2011, merely adding language “set of instructions executed by a computing device”..... Providing, to the computing device, ... providing , to the computing device,.....associating, via the computing device, ....assigning, via the computing device,.....receiving, via direct interactive dialogue....selecting, via the computing device,.....outputting, via the computing device,....[claim 1 as amended 3/22/2011]..... outputting, via the computing device..... wherein each object comprises an “**encapsulated**” combination of data .....Manipulate the data” [claim 1];

In claim 11, as mended [3/22/2011], method of diagnosing.....implemented as a set of instructions executed by a computing device.....receiving, via direct interactive dialogue.....assigning, via the computing device,.....selecting, via the computing device,.....invoking, via the computing device, a preferred symptom object.....outputting, via the computing device, .....invoking or selecting,

**do not have support** from the originally filed specification [page 2 through 85 including drawing fig 1-35], particularly “ a set of instructions executed by a computing device [as amended 3/22/2011], further instant claims 1,11 are considered to be mere

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software routines and/or software code in view of the specification [page 3, 4-7, line 12-16, page 10, 21-30, page 14,-20, page 31-34, page 85 line 12-26, page 87],  
specifically examiner notes evidence from the specification as follows:

- a) *spec page 13-14 directed to “disease object” – defines as software object*
- b) *spec page 15-16 directed to “symptom object” – defines as software object*
- c) *spec page 18-19 directed to “valuator object” – defines as software object*
- d) *spec page 19-20 directed to “question object” – defines as software object*
- e) *spec page 20-21 directed to “node object”- defines as software object*
- f) *spec page 29-30 directed to “alternative symptom” –defines as software object*

also, **Encapsulation** is the process of combining data and functions into a single unit called class , and is only accessible through the functions present inside the class, data encapsulation is part of hiding data, and therefore, claims 1 as amended considered as software per sa, further, claim 11 also as amended considered as software per sa

**NOTE:** In the page 8, line 1-2, claim 11[as amended 3/22/2011], examiner noted that the limitation “wherein each object.....encapsulated combination.....[deleted]

The claims 6 and 9 [as amended 3/22/2011] merely added language “implemented as a set of instructions executed by a computing device” do not have support from the originally filed specification , lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 U.S.C. 101. They are clearly not a series of steps or acts to be a process nor are they a combination

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of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. It is further noted that claims 6,9 as amended merely directed to "objects" invoking another "object" is considered to be mere software routines and/or software code in view of the specification [page 3, 4-7, line 12-16, page 10, 21-30, page 14,-20, page 31-34, page 85 line 12-26, page 87], for example:

- a) *spec page 13-14 directed to "disease object" – defines as software object*
- b) *spec page 15-16 directed to "symptom object" – defines as software object*
- c) *spec page 18-19 directed to "valuator object" – defines as software object*
- d) *spec page 19-20 directed to "question object" – defines as software object*
- e) *spec page 20-21 directed to "node object"- defines as software object*
- f) *spec page 29-30 directed to "alternative symptom" –defines as software object*

therefore, claims 1,6,9, 11 as amended [3/22/2011] considered as software per se.

They are, at best, functional descriptive material per se. Claims 7-8, 10, 20- 42, 49-51 and 54-55 are likewise rejected.

A claimed process is eligible for patent protection under 35 U.S.C. § 101 if:

"(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. See Benson, 409 U.S. at 70 ('Transformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines. '); Diehr, 450 U.S. at 192 (holding that use of mathematical formula in process 'transforming or reducing an article to a different state or thing' constitutes patent-eligible subject matter); see also Flook, 437 U.S. at 589 n.9 ('An argument can be made [that the Supreme] Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a 'different state or thing' '); Cochrane v. Deener, 94 U.S. 780, 788 (1876) ('A process is...an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.').<sup>7</sup> A claimed process involving a fundamental principle that uses a particular machine or apparatus would not pre-empt uses of the principle that do not also use the specified machine or apparatus in the manner claimed. And a claimed process that transforms a particular article to a specified different state or thing by applying a fundamental principle would not pre-empt the use of the principle to transform any other article, to transform the same article but in a manner not covered by the claim, or to do anything other than transform the specified article." (In re Bilski, 88 USPQ2d 1385, 1391 (Fed. Cir. 2008))



Also noted in Bilski is the statement, "Process claim that recites fundamental principle, and that otherwise fails 'machine-or-transformation' test for whether such claim is drawn to patentable subject matter under 35 U.S.C. §101, is not rendered patent eligible by mere field-of-use limitations; another corollary to machine-or-transformation test is that recitation of specific machine or particular transformation of specific article does not transform unpatentable principle into patentable process if recited machine or transformation constitutes mere 'insignificant post- solution activity.'" (In re Bilski, 88 USPQ2d 1385, 1385 (Fed. Cir. 2008)) Examples of insignificant post-solution activity include data gathering and outputting. Furthermore, the machine or transformation must impose meaningful limits on the scope of the method claims in order to pass the machine-or-transformation test. Please refer to the USPTO's "Guidance for Examining Process Claims in view of In re Bilsk memorandum dated January 7, 2009, <[http://www.uspto.gov/web/offices/pac/dapp/opla/documents/bilski\\_guidance\\_memo.pdf](http://www.uspto.gov/web/offices/pac/dapp/opla/documents/bilski_guidance_memo.pdf)>>

**NOTE:** Examiner also cites and incorporates "**Board of Patent Appeals and Interferences**" **decision** page 8-10 mailed on 3/23/2010.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. ***Claims 6-9, 20-27, 29-38, 40-42, and 49-51, and 54-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Iliff (U.S. Patent No. 5,868,669).***

12. With respect to claim 6, Iliff teaches an object based automated diagnostic system implemented as a set of instructions executed by a computing device [col 4, line 37-47], Iliff supports computer having input and output, algorithm processor executing the instruction in the computer; computing device corresponds to Iliff's computer comprising a plurality of diagnostic objects which interact as executed by the computing device [col 4, line 37-47] to receive input from a user and , as a result of said interaction [col 4, line 62-67, col 5, line 36-45], Iliff specifically supports both input and out put device;

determine a diagnosis of a patient, (MDATA system supports object oriented language such as C++ related to patient's medical records and/objects, further Encapsulation is the process of combining data and functions into a single unit called class is integral part of C++ programming because Iliff specifically teaches MDATA system including defining various software modules as detailed in col 8, line 49-67) wherein the objects include at least two diagnostic objects comprising:

a disease object processing data indicative of an abnormal health state or disease (col 20, line 1-5, col 36, line 50-63), abnormal health state or disease corresponds to Iliff's disease object[s];

a symptom object, processing data indicative of a patient sign, complaint, finding, or test results (col 39, line 35-60), Iliff specifically teaches MDATA system processing information related to patient's diagnostic or symptom screening for example as detailed in col 39, line 35-60;

a valuator object, processing data indicative of a value of the symptom of the patient, a question object, processing data indicative of questions to ask the patient specific to a specific symptom of the patient (col 30, line 35-60, col 40, line 7-12), Iliff specifically teaches MDATA system specifically processing specific questions related to specific headaches for example "migraine screening",

a node object, processing data indicative of a single well-defined question to the patient and a candidate object processing data indicative of candidate disease for diagnosis of the patient (i.e., diagnoses and symptoms, each diagnosis associated with symptoms in MDATA system, lines 24-35 in col. 12, lines 38- 45 in col. 21, and line 24 in col. 35 thru line 49 in col. 42, the MDATA system is written in object-oriented program language, such as C++, lines 7-16 in col. 14, therefore teaching object),

wherein the objects are arranged in a hierarchical relationship such that the result of one of the objects is input to another of the objects (i.e., a directed graph of a node map, line 64 in col. 14.thru line 24 in col. 15, and process of initial screening

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questions to migraine screening questions and to migraine confirmation questions, lines 25-44 in col. 35, lines 61-67 in col. 39, and lines 18-25 in col. 40),

liff teaches at least one of the diagnostic objects directly invokes another of the diagnostic objects in a computer-based medical diagnostic system so as to output a diagnosis of a patient based on the prior object invocation (i.e., a directed graph of a node map in which a node directly invokes another node, line 64 in col. 14 thru line 24 in col. 15; migraine object directly invokes migraine symptom/questions objects, lines 61-67 in col. 39).

13. With respect to claim 7, liff teaches the objects include a plurality of disease objects and a plurality of symptom objects (i.e., diagnoses and symptoms, each diagnosis associated with symptoms in MDATA system, lines 24-35 in col. 12, lines 38-45 in col. 21, and line 24 in col. 35 thru line 49 in col. 42, the MDATA system is written in object-oriented program language, such as C++, lines 7-16 in col. 14, therefore teaching object).

14. With respect to claim 8, liff teaches an engine object to coordinate the other objects (i.e., a node map, lines 1-7 in col. 15 and evaluation process 254 in fig. 6).

15. With respect to claim 9, liff teaches an object based automated diagnostic system implemented as a set of instructions executed by a computing device [col 4, line 37-47], liff supports computer having input and output, algorithm processor

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executing the instruction in the computer; computing device corresponds to Iliff's computer comprising:

a plurality of diagnostic objects which interact to receive input from a user and, as a result of said interaction [col 4, line 62-67, col 5, line 36-45], Iliff specifically supports both input and out put device;

determine a diagnosis of a patient ( col 13, line 6-10, MDATA system supports classification of "dieses" particularly creating and classifying dieses to advise the patients, further MDATA system supports object oriented language such as C++ related to patient's medical records and/objects, because Iliff specifically teaches MDATA system including defining various software modules as detailed in col 8, line 49-67) wherein the diagnostic objects include at least a plurality of disease objects, each disease object processing data indicative of an abnormal health state or disease" (col 20, line 1-5, col 36, line 50-63 ), abnormal health state or disease corresponds to Iliff's disease object[s];

a plurality of symptom objects, each symptom object processing data indicative of a patient sign, complaint, finding, or test result" (col 39, line 35-60), Iliff specifically teaches MDATA system processing information related to patient's diagnostic or symptom screening for example as detailed in col 39, line 35-60; and

a plurality of valuator objects, each valuator object processing data indicative of a value of a symptom of the patient" (col 30, line 35-60, col 40, line 7-12), Iliff specifically teaches MDATA system specifically processing specific questions related to specific headaches for example "migraine screening"; and

wherein at least some of the diagnostic objects perform their own tasks and directly call upon other diagnostic objects to perform their tasks at the appropriate time in a computer-based medical diagnostic system so as to output a diagnosis of a patient (i.e., diagnosis, symptoms, and evaluation processes, each diagnosis associated with symptoms in MDATA system, lines 24-35 in col. 12, lines 38-45 in col. 21, lines 36-41 in col. 39, line 24 in col. 35 thru line 49 in col. 42, and lines 24-37 in col. 18; the MDATA system is written in object-oriented program language, such as C++, lines 7-16 in col. 14, therefore teaching object; a directed graph of a node map in which a node directly invokes another node, line 64 in col. 14 thru line 24 in col. 15).

‘wherein the system is operable on a computing environment (fig 1, fig 3-4, col 7, line 43-49).

16. With respect to claim 20, Iliff teaches the objects include a disease object (i.e., migraine object, lines 53-60 in col. 39), a symptom object (i.e., headache, lines 53-60 in col. 39), a valuator object (i.e., evaluation process 254, lines 36-41 in col. 39), a question object (i.e., questions, lines 41-52 in col. 39), a node object (i.e., interface to a client 124 in fig. 4), and a candidate object (i.e., ranked lists, lines 12-35 in col. 39).

17. With respect to claim 21, Iliff teaches. the symptom object invokes the valuator object (i.e., the results of symptoms are evaluated, lines 53-60 in col. 39).

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18. With respect to claim 22, Iliff teaches the valuator object invokes the question object (i.e., another screen .questions are invoked after the evaluation, line 53 in col. 39 thru line 12 in col. 40).

19. With respect to claim 23, Iliff teaches the question object invokes the node object (i.e., another screen questions are asked to the user, line 53 in col. 39 thru line 12 in col. 40).

20. With respect to claim 24, Iliff teaches a particular disease is associated with a plurality of disease objects corresponding to different phases of the particular disease (i.e., stages of illness, lines 31-42 in col. 1).

21. With respect to claim 25, Iliff teaches a particular disease is associated with a plurality of disease objects corresponding to different populations for the particular disease (lines 22-28 in col. 47).

22. With respect to claim 26, Iliff teaches a particular disease object is representative of a plurality of related diseases that share common symptoms (i.e., meningitis and brain tumor shares headache, lines 11-26 in col. 41).

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23. With respect to claim 27, Iliff teaches the objects act independently of other objects and a particular object retains a record of its actions for future reference (lines 37-47 in col. 13 and lines 24-44 in col. 18).

24. With respect to claim 29, Iliff teaches a particular disease object monitors the questions and answers of other disease objects (lines 11-26 in col. 41 and lines 43-46 in col. 40).

25. With respect to claim 30, Iliff teaches the engine object coordinates a plurality of concurrently operating disease objects by switching execution among the disease objects (i.e., excluding diseases from diagnostic consideration, lines 11-26 in col. 41 and lines 43-46 in col. 40).

26. The limitations of claim 31 are rejected in the analysis of claim 21 above, and the claim is rejected on that basis.

27. The limitations of claim 32 are rejected in the analysis of claim 20 above, and the claim is rejected on that basis.

28. The limitations of claim 33 are rejected in the analysis of claim 22 above, and the claim is rejected on that basis.



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29. The limitations of claim 34 are rejected in the analysis of claim 23 above and the claim is rejected on that basis.

30. The limitations of Claim 35 are rejected in the analysis of claim 24 above and the claim is rejected on that basis.

31. The limitations of claim 36 are rejected in the analysis of claim 25 above and the claim is rejected on that basis.

32. The limitations of claim 37 are rejected in the analysis of claim 26 above and the claim is rejected on that basis.

33. The limitations of claim 38 are rejected in the analysis of claim 27 above and the claim is rejected on that basis.

34. The limitations of claim 40 are rejected in the analysis of claim 29 above and the claim is rejected on that basis.

35. The limitations of claim 41 are rejected in the analysis of claim 8 above, and the claim is rejected on that basis.

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36. The limitations Of claim 42 are rejected in the analysis of claim 30 above, and the claim is rejected on that basis.

37. With respect to claim 49, Iliff teaches the disease object directly invokes another disease object (i.e., migraine disease object directly invokes a next disease object in a ranked list, lines 38-42 in col. 40 and lines 17-35 in col. 39).

38. With respect to claim 50, Iliff teaches the disease object directly invokes the symptom object (i.e., migraine object directly invokes ,migraine symptom/questions objects, lines 61-67 in col. 39).

39. With respect to claim 51, Iliff teaches one of the plurality of disease objects directly calls another of the plurality of disease object (i.e., .migraine disease object directly invokes a next disease object in a ranked list, lines 38-42 in col. 40 and lines 17-35 in col. 39).

40. As to Claim 54-55, Iliff teaches “wherein the diagnosis identifies at least one abnormal health state” (col 20, line 1-5, col 36, line 50-63)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. ***Claims 1, 3-5, 10-13, 15-19, 43-48, 52-53 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iliff (U.S. Patent No. 5,868,669) in view of Gray (U.S. Patent No. 6,149,585).***

41. With respect to claim 1, Iliff teaches “ a method of diagnosing a patient, implemented as a set of instructions executed by a computing device [col 4, line 37-47], Iliff supports computer having input and output, algorithm processor executing the instruction in the computer; computing device corresponds to Iliff's computer;

Iliff teaches providing , to the computing device, [col 4, line 37-47], a plurality of disease objects, processing data indicative of an abnormal health state or disease

and each disease object (col 20, line 1-5, col 36, line 50-63), abnormal health state or disease corresponds to Iliff's disease object[s]; associated with a plurality of symptom objects (col 20, line 1-5, col 36, line 50-63) ,

Iliff teaches providing, to the computing device, a plurality of symptom objects, each symptom object processing data indicative of a patient sign, complaint, finding, or test result ( col 39, line 35-60, i.e., diagnoses and symptoms, each diagnosis

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associated with symptoms in MDATA system, lines 24-35 in col. 12, lines 38-45 in col. 21, and line 24 in Col. 35 thru line 49 in col. 42, the MDATA system is written in object-oriented program language, such as C++, lines 7-16 in col. 14, therefore teaching object);

Iliff teaches “associating, via the computing device, a disease object with at least one symptom object” (col 20, line 1-5, col 36, line 50-63);

Iliff teaches assigning , via the computing device, a weight for each symptom object (i.e., weighted symptom questions, lines 24-34 in col. 60, lines 45-48 in col. 61, and lines. 28- 39 in col. 62).’ Iliff teaches alternative symptoms objects for a particular preferred symptom object are selected from a set of archived symptoms objects that are available for reuse (i.e., symptoms of headache, lines 6-29 in col. 13, fig. 6, lines 36-57 in col. 39, and lines 7-32 in col. 40).

‘receiving, via direct interactive dialogue between a user and the computing device, a patient symptom input” (Iliff: col 5, line 36-45; Gray: fig 19-22A, col 9, line 42-55), Iliff specifically teaches user interface allows asking “questions”, and “receiving answers” corresponds to interactive dialogue between users and computing device; further prior art of reference Gray also specifically supports graphical user interface allows to select required information particularly related to patient physical examination data user selecting “signs & Symptoms questions and answers;

Iliff teaches associating the patient symptom input with at least one symptom object (col 25, line 64-67, col 26, line 1-13)

Iliff teaches, selecting via the computing device (fig 1, fig 3-4) at least one disease object applicable to a patient (lines 53-60 in col. 39); based on at least one of the preferred symptom object or the alternative symptom object(i.e., the MDATA system concludes that migraine is the most likely cause of the patient's headache, (i.e., symptoms of headache, lines 6-29 in col. 13, fig. 6, lines 36-57 in col. 39, and lines 7-32 in col. 40 );

Iliff teaches invoking, via the computing device, (fig 1, fig 3-4), a preferred symptom object or one of the related alternative symptom objects for the, (fig 1, fig 3-4), selected disease object so as to determine a diagnosis of a patient based on the object invocation (i.e., migraine object directly invokes migraine symptom/questions objects, lines 61-67 in col. 39);

Iliff and Gray teaches “outputting, via the computing device, a diagnosis based at least one of the invoking or selecting (Iliff: fig 1,3-4col 5, line 36-38; Gray: col 1, line 57-67col 5, line 61-64), Iliff, and Gray both supports input and out devices particularly graphical user interface allows users to get return response to display the list;

“wherein each object comprises an encapsulated combination of data and processes that manipulate the data” (MDATA system supports object oriented language such as C++ related to patient’s medical records and/objects, further Encapsulation is the process of combining data and functions into a single unit called class is integral part of C++ programming because Iliff specifically teaches MDATA system including defining various software modules as detailed in col 8, line 49-67) .

It is however, noted that Iliff does not explicitly disclose a preferred weight and an alternative weight. However, Gray discloses a plurality of disease associated with a plurality of symptoms in a medical diagnostic enhancement system (lines 7-24 in col. 6 and line 23 in col. 2 thru line 41 in col. 3). Gray also discloses assigning a weight for each symptom, wherein a particular disease includes a preferred weight for one or more preferred symptoms and an alternative weight for one or more related alternative symptoms, wherein the alternative symptoms are selected from a set of symptoms (lines 25-48 in col. 6).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate diagnostic enhancement tasks particularly patient data for possible diagnoses of Gray into computerized medical diagnostic particularly user's changing condition over time of Iliff because both Iliff, Gray specifically directed to medical diagnostic system [Iliff: Abstract; Gray: Abstract], particularly in a object oriented environment [Iliff: col 8, line 46-55; Gray: col 3, line 10-16] and they both are from same field of endeavor; Because both Iliff and Gray teach medical diagnostic and treatment advice, it would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to substitute and/or modify one method for the other to achieve the predictable result of extracting specific diagnoses and symptom conditions, further able to present an accurate diagnosis to the patient to treat condition[s] [Gray: Abstract, col 4, line 31-39]

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42. With respect to claim 3, Iliff teaches the set of archived symptom objects is stored in a database (fig. 1, fig. 3, and fig. 6).

43. With respect to claim 4, Iliff teaches accessing the set of archived symptom objects stored in the database via a global computer network (fig. 1).

44. With respect to claim 5, Iliff teaches each symptom object has underlying objects used to establish a symptom (i.e., a node map, lines 1-7 in col. 15), wherein the objects are arranged in a hierarchical relationship (i.e., a directed graph of a node map, line 64 in col. 14 thru line 24 in col. 15).

45. With respect to claim 10, Iliff discloses the claimed subject matter as discussed above. Iliff further teaches one or more alternative symptoms of a preferred symptom (i.e., symptoms of headache, lines 36-57 in col. 39). Iliff does not explicitly disclose a preferred weight and an alternative weight. However, Gray discloses a plurality of disease associated with a plurality of symptoms in a medical diagnostic enhancement system (lines 7-24 in col. 6 and line 23 in col. 2 thru line 41 in col. 3). Gray also discloses assigning a weight for each symptom, wherein a particular disease includes a preferred weight for one or more preferred symptoms and an alternative weight for one or more alternative symptoms (lines 25-48 in col. 6). Therefore, based on Iliff in view of Gray, it would have been obvious to one having ordinary skill in the art at the time the

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invention was made to utilize the teaching of Gray to the system of Iliff in order to present an accurate diagnosis.

46. With respect to claim 11, Iliff teaches providing a plurality of disease objects, processing data indicative of an abnormal health state or disease and each disease object (col 20, line 1-5, col 36, line 50-63), abnormal health state or disease corresponds to Iliff's disease object[s]; associated with a plurality of symptom objects , each symptom object processing data indicative of a patient sign, complaint, finding, or test result ( col 39, line 35-60, i.e., diagnoses and symptoms, each diagnosis associated with symptoms in MDATA system, lines 24-35 in col. 12, lines 38-45 in col. 21, and line 24 in Col. 35 thru line 49 in col. 42, the MDATA system is written in object-oriented program language, such as C++, lines 7-16 in col. 14, therefore teaching object);

Iliff teaches receiving, via direct interactive dialogue between a user and the computing device, a patient symptom input (Iliff: col 5, line 36-45; Gray: fig 19-22A, col 9, line 42-55), Iliff specifically teaches user interface allows asking "questions", and "receiving answers" corresponds to interactive dialogue between users and computing device; further prior art of reference Gray also specifically supports graphical user interface allows to select required information particularly related to patient physical examination data user selecting "signs & Symptoms questions and answers;

Iliff teaches associating the patient symptom input with at least one symptom object (col 25, line 64-67, col 26, line 1-13)



Iliff teaches assigning , via the computing device (col 4, line 37-47, fig 1) a weight for one or more symptom (i.e., weighted symptom questions, lines 24-34 in col. 60, lines 45-48 in col. 61, and lines 28-39 in col. 62). Iliff teaches alternative symptoms for a particular preferred symptom are selected from a set of archived symptoms objects that are available for reuse (lines 6-29 in col. 13, fig. 6, lines 36-57 in col. 39, and lines 7-32 in col. 40). Iliff teaches a. particular preferred symptom has one or more related alternative symptoms that represent different approaches for eliciting further diagnostic information related to a same patient health condition (i.e., symptoms of headache, lines 36-57 in col. 39, lines 36-57 in col. 39, and lines 7-32 in col. 40).

Iliff teaches selecting, via the computing device, ( fig 1, fig 3-4), from the plurality of disease objects, a disease object applicable to a patient (i.e., the MDATA system concludes that migraine is the most likely cause of the patient's headache, lines 53-60 in col. 39);

Iliff teaches invoking, via the computing device (fig 1, fig 3-4), a preferred symptom object or one of the related alternative symptom objects for the selected disease object so as to output a diagnosis of a patient based on the object invocation (i.e., migraine object directly invokes migraine symptom/questions objects, lines 61-67 in col. 39).

Iliff, and Gray teaches 'outputting, via the computing device, a diagnosis based at least one of the invoking or selecting (Iliff: fig 1,3-4col 5, line 36-38; Gray: col 1, line 57-67col 5, line 61-64), Iliff, and Gray both supports input and out devices particularly graphical user interface allows users to get return response to display the list;

It is however, noted that Iliff does not explicitly disclose a preferred weight and an alternative weight. On the other hand, Gray discloses a plurality of disease associated with a plurality of symptoms in a medical diagnostic enhancement system (lines 7-24 in col. 6 and line 23 in col. 2 thru line 41 in col. 3). Gray also discloses assigning a weight for each symptom, wherein a particular disease includes a preferred weight for one or more preferred symptoms and an alternative weight for one or more alternative symptoms, wherein the alternative symptoms for a particular preferred symptom are selected from a set of symptoms (lines 25-48 in col. 6).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate diagnostic enhancement tasks particularly patient data for possible diagnoses of Gray into computerized medical diagnostic particularly user's changing condition over time of Iliff because both Iliff, Gray specifically directed to medical diagnostic system [Iliff: Abstract; Gray: Abstract], particularly in a object oriented environment [Iliff: col 8, line 46-55; Gray: col 3, line 10-16] and they both are from same field of endeavor; Because both Iliff and Gray teach medical diagnostic and treatment advice, it would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to substitute and/or modify one method for the other to achieve the predictable result of extracting specific diagnosis's and symptom conditions, further able to present an accurate diagnosis to the patient to treat condition[s] [Gray: Abstract, col 4, line 31-39]

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47. With respect to claim 12, Gray further teaches weights can be different (lines 25-48 in col. 6). Therefore, the limitations of claim 12 are rejected in the analysis of claim 11 above, and the claim is rejected on that basis.

48. With respect to claim 13, Gray further teaches weights can be different (lines 25-48 in col. 6). Therefore, the limitations of claim 13 are rejected in the analysis of claim 12 above, and the claim is rejected on that basis.

49. With respect to claim 15, Iliff teaches the set of archived symptom objects is stored in a database (fig. 1, fig. 3, and fig. 6).

50. With respect to claim 16, Iliff teaches accessing the set of archived symptom objects stored in the database via a global computer network (fig. 1).

51. With respect to claim 17, Iliff teaches each symptom object has underlying objects used to establish a symptom (i.e., a node map, lines 1-7 in col. 15).

52. With respect to claim 18, Iliff teaches the reuse includes using one of the archived symptom objects in conjunction with a plurality of disease objects (lines 36-52 in col. 39).

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53. With respect to claim 19, Iliff teaches a particular preferred symptom is selected when a particular diagnosis is likely (lines 36-52 in col. 39).

The limitations of claim 43 are rejected in the analysis of claim 18 above, and the claim is rejected on that basis.

54. The limitations of claim 44 are rejected in the analysis of claim 19 above, and the claim is rejected on that basis.

55. With respect to claim 45, Iliff teaches a particular disease is associated with a plurality of disease objects corresponding to different phases of the particular disease (i.e., stages of illness, lines 31-42 in col. 1).

56. With respect to claim 46, Iliff teaches a particular disease is associated with a plurality of disease objects corresponding to different populations for the particular disease (lines 22-28 in col. 47).

57. With respect to claim 47, Iliff teaches a particular disease object is representative of a plurality of related diseases that share common symptoms (i.e., meningitis and brain tumor shares headache, lines 11-26 in col. 41).

58. With respect to claim 48, Iliff teaches the selected disease object directly invokes another of the plurality of disease objects (i.e., migraine disease object directly

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invokes a next disease object in a ranked list, lines 38-42 in col. 40 and lines 17-35 in col. 39).

59. With respect to claim 52, Iliff teaches the selected disease object directly invokes another of the plurality of disease objects (i.e., migraine disease object directly invokes a next disease object in a ranked list, lines 38-42 in c01.40 and lines 17-35 in col. 39).

60. As to Claim 53,56, Iliff teaches “wherein the diagnosis identifies at least one abnormal health state” (col 20, line 1-5, col 36, line 50-63)

**61. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iliff (U.S. Patent No. 5,868,669) in view of Gray (U.S. Patent No. 6,149,585), and further in view of Branson et al. (U.S. Patent No. 6,598,035).**

62. With respect to claim 2, Iliff and Gray disclose the claimed subject matter as discussed above except assigning a new name for a symptom object that is reused. However, Branson teaches assigning a new name for a symptom object that is reused (fig. 16 and lines 17-39 in col. 20) in order to provide customization and extension of an object (lines 21-57 in col. 4). Therefore, based on Iliff in view of Gray, and further in view of Branson, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Branson to the system of Iliff in order to provide customization and extension of an object.

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63. The limitations of claim 14 are rejected in the analysis of claim 2 above, and the claim is rejected on that basis.

**12. *Claims 28 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iliff (U.S. Patent No. 5,868,669) in view of Branson et al. (U.S. Patent No. 6,598,035)***

64. With respect to claim 28, Iliff discloses the claimed subject matter as discussed above except encapsulation of data. However, Branson teaches each object has corresponding data and processes, and wherein the data is encapsulated so that other objects only see the processes of a particular object that can be invoked to access the data (lines 39-50 in col. 6, lines 26-34 in col. 12, and lines 23-31 in col. 15) in order to maintain the integrity of the data. Therefore, based on Iliff in view of Branson, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Branson to the system of Iliff in order to maintain the integrity of data .

Therefore, based on Iliff in view of Branson, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Branson to the system of Iliff in order to maintain the integrity of data of an object. The limitations of claim 39 are rejected in the analysis of claim 28 above, and the claim is rejected on that basis.

### **Response to Argument**

65. Applicant's arguments [page 12-30] filed 3/22/2011 with respect to claims 1-56 have been fully considered but they are not persuasive, for examiners' response, see discussion below:

**NOTE:** Examiner also cites and incorporates "**Board of Patent Appeals and Interferences**" **decision** mailed on 3/23/2010

### ***Rejection under - 35 USC § 101***

a) At page 14-15, claims 1-56, Examiner noted applicant amended claims 1,6,7,9,11 directed to statutory subject matter, the following is examiners' response:

As to the above argument [a]: Although applicant amended claims 1,6,7,9,11 added "a set of instructions executed by a computing device", merely adding language "set of instructions executed by a computing device"..... selecting via the computing device.....invoking, via the computing device,.....disease objects..... outputting, via the computing device..... wherein each object comprises an "**encapsulated**" combination of data .....manipulate the data" do not have support from the originally filed specification [page 2 through 85 including drawing fig 1-35], particularly " a set of instructions executed by a computing device [as amended 3/22/2011], further instant claims 1,11 are considered to be mere software routines and/or software code in view of the specification [page 3, 4-7, line 12-16, page 10, 21-30, page 14,-20, page 31-34, page 85 line 12-26, page 87], specifically examiner notes as follows:

1) *spec page 13-14 directed to "disease object" – defines as software object*

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- 2) *spec page 15-16 directed to “symptom object” – defines as software object*
- 3) *spec page 18-19 directed to “valuator object” – defines as software object*
- 4) *spec page 19-20 directed to “question object” – defines as software object*
- 5) *spec page 20-21 directed to “node object”- defines as software object*
- 6) *spec page 29-30 directed to “alternative symptom” –defines as software object*

also, **Encapsulation** is the process of combining data and functions into a single unit called class , and is only accessible through the functions present inside the class, data encapsulation is part of hiding data, and therefore, claims 1,11 as amended considered as software per sa, as stated above

Therefore, claims 1,6,9, 11 as amended [3/22/2011] considered as software per sa. They are, at best, functional descriptive material per se. Claims 1-56 are likewise rejected. As stated above.

Examiner hereby incorporating previous office action arguments [mailed 12/7/2010]

Examiner notes, as stated in the Final Rejection dated 8/13/2007, and Board decision mailed on 3/23/2010 [page 8-10 ] The examiner finds that the claims 6, 9 in the instant application [software routines or merely algorithms] share the same characteristics as the claims in Gottshalk. The claims 6, 9 in the instant application are directed to a “an object based automated computer-implemented diagnostic system”[claim 6]; “an object based automated diagnostic system” [claim 9] is equivalent to machine-implemented abstract idea. These claims 6,9 are (i) so abstract and sweeping



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as to cover both known and unknown uses of the underlying "software algorithm" (ii) so abstract and sweeping as to be applicable to a wide variety of unrelated applications.

Further, examiner also noted that deleted "computer environment..." merely amending claims 1,6,11, added "computing device...." , particularly computing device do not have support from the instant application specification as detailed above.

b) At page 15-20, claim 6,9, applicant argues present application claims " a plurality of diagnostic objects which interact.....to receive input from a user and, as a result .....receive input from a user....[.]"

The present application claims " a disease object processing data.....The patent office has not shown that the '669 patent discloses " a disease object....[.]. The patent office's assertion that "abnormal health state or disease corresponds to....[the present application's] disease object[s]" is not supported by objective evidence [page 16]

At page 17, The present application claims " a valuator object processing data....[.]". The Patent office has not shown that the '669 patent discloses " a valuator object...[.]. Furthermore, the patent office has not shown that the '669 discloses "processing data indicative of a value of a symptom of the patient"

The present application claims " a node object processing data .....to the patient ...[.]". The patent office has cited various portions of the '669 disclosing "screening questions?, but has not shown that the '669 patent discloses "processing data indicative of ...defined question...[.]

Finally, the present application claims “the objects are arranged in hierarchical relationship.....[.]. The patent office has not shown that the ‘669 patent discloses “a hierarchical relationship”.... [page 17-20]

### ***PRINCIPLES OF LAW***

In rejecting claims under 35 U.S.C. § 102, “[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation.” *Perricone v. Medicis Pharmaceutical Corp.*, 432 F.3d 1368, 1375 (Fed. Cir. 2005) (citing *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir. 1992)).

Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. Examiner determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. ofSci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). The properly interpreted claim must then be compared with the prior art.

If the Examiner's burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

As to the argument [b], examiner hereby refer to examiner answer arguments mailed date 8/28/2008 and Board decision page 11-17 mailed on 3/23/2010, also follow the discussion;, further noted that applicant merely presenting claim language without specifying how the instant amendments address the issues raised by Examiner. Accordingly, Examiner repeats the arguments previously presented.

As mended claims 6,9, Iliff supports computer having input and output, algorithm processor executing the instruction in the computer; computing device corresponds to Iliff's computer , further Iliff strongly supports both input and out put device col 4, line [62-67, col 5, line 36-45],

As noted from the prior art of the reference, Iliff specifically teaches **MDATA** system supports object oriented language such as C++ related to patient's medical records and/objects, further combining data and functions into a single unit called class is integral part of C++ programming because Iliff specifically teaches MDATA system including defining various software modules as detailed in col 8, line 49-67 reads on the claim 6 [as amended] limitation" plurality of diagnostic objects which interact, as executed by the computing deice, to receive input from a user and, as a result of said interaction [Iliff: col 4, line 62-67] determine a diagnosis of a patient ..."

Iliff also strongly teaches crating various catalog objects related to medical algorithm in the patient list for all patients particularly identifying different set of "problems" or "complaint" for example "headache" that requires immediate attention, including "very serious" that requires medical attention (col 20, line 1-5, col 36, line 50-

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63) reads on “a disease object processing data indicative of an abnormal health state or disease”. It is further noted that Iliff specifically teaches (MDATA system processing information related to patient’s diagnostic or symptom screening for example as detailed in col 39, line 35-60 reads on “a symptom object, processing data indicative of a patient sign, complaint, finding or test results; further, Iliff teaches MDATA system specifically processing specific questions related to specific headaches for example “migraine screening” (col 30, line 35-60, col 40, line 7-12) reads on “processing data indicative of questions to ask the patient specific to a specific symptom of the patient”.

Examiner applies above arguments to claim 9 and their depend claims.

Therefore, Applicant’s remarks are deemed not to be persuasive, and claims 6-9, 20-27, 29-38, 40-42, and 49-51, and 54-55 stand rejected under 35 USC 102(b) as being clearly anticipated by Iliff.

c) At page 20-24, claims 1, page 24-28, claim 11, page 28-29, claim 10 applicant argues the following:

The present application claims “[a] method of diagnosing a patient, implemented as a set of instructions executed by a computing device, through the reuse of medical script objects.....[.]”. The patent office has not shown that the ‘669 patent discloses the “reuse of medical script objects”

The present application claims “ a plurality of disease objects, each disease object processing data indicative of an abnormal health state or disease....[.]. The patent office’s assertion that “abnormal health state or disease corresponds to ...[the

present application's] disease object[s] is not supported.....The patent office has not shown how the cited portions of the '669 patent teach or suggest " a plurality of disease objects....processing data indicative of an abnormal health state or disease...[.]”

The present application claims “providing....a plurality of symptom objects, each symptom object processing data indicative of at least a patient sign....result...[.]”. The Patent office cited portions of the '669 patent that discloses "the MDATA system.....”diagnostic screening questions”....The patent office has not shown how the cited portions of the '669 patent teach or suggest “ a plurality of symptom objects...[.]

The present application claims “assigning....a weight for each symptom object....The patent office cited portions of the '669 patent that disclose “the scoring of the screening .....

The present application claims " a particular disease object includes a preferred weight.....[.]". The patent office correctly acknowledges that the '669 does not disclose “a preferred weight” and “ an alternative weight...[.]” The patent office has not shown how the '669 patent, or the disclosure of Gray, either alone or in combination , teach or suggest .....obviousness under 103(a).

As to the above argument [c],  
Under 35 USC § 103, by showing insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was

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made to a person having ordinary skill in the art to which said subject matter pertains." KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1734 (2007).

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). See also KSR, 127 S. Ct. 1727, 1734 ("While the sequence of these questions might be reordered in any particular case, the [Graham] factors continue to define the inquiry that controls.")

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results."). *Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (quoting KSR Int'l v. Teleflex, Inc., 127 S. Ct. 1727, 1739(2007)). "One of the ways in which a patent's subject matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims." KSR, 127 S. Ct. at 1742.

Discussing the obviousness of claimed combinations of elements of prior art, KSR explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a

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different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida v. AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock[, Inc. v. Pavement Salvage Co.]*, 396 U.S. 57 (1969)] are illustrative--a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740. Where the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that there was "an apparent reason to combine the known elements in the fashion claimed." KSR, 127 S. Ct. at 1741. Such a showing requires "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*, 127 S. Ct. at 1741 (quoting *In re Kahn*, 441 F.3d 977, 987 (Fed. Cir. 2006)).

The reasoning given as support for the conclusion of obviousness can be based on interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art. KSR, 127 S. Ct. at 1740-41. See also *Dystar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2007).

Examiner noted that court has recently reaffirmed that:

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[A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the 'improvement' is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient. Because the desire to enhance commercial opportunities by improving a product or process is universal-and even common-sensical-we have held that there exists in these situations a motivation to combine prior art references even absent any hint of suggestion in the references themselves. In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him capable of combining the prior art references.

Leapfrog, 485 F.3d at 1162 (holding it "obvious to combine the Bevan device with the SSR to update it using modem electronic components in order to gain the commonly understood benefits of such adaptation, such as decreased size, increased reliability, simplified operation, and reduced cost").

Also, a reference may suggest a solution to a problem it was not designed to solve and thus does not discuss. KSR, 127 S. Ct. at 1742 ("Common sense teaches... that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle .....A person of ordinary skill is also a person of ordinary creativity, not an automaton.").

The prior art relied on to prove obviousness must be analogous art. As explained in Kahn,

the 'analogous-art' test-has long been part of the primary Graham analysis articulated by the Supreme Court. See *Dann [v. Johnston]*, 425 U.S. [219,] 227-29 (1976), *Graham*, 383 U.S. at 35. The analogous-art test requires that the Board show that a reference is either in the field of the applicant's endeavor or is reasonably pertinent to the problem with which the inventor was concerned in



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order to rely on that reference as a basis for rejection. In re Oetiker, 977 F.2d 1443, 1447 (Fed. Cir. 1992). References are selected as being reasonably pertinent to the problem based on the judgment of a person having ordinary skill in the art. Id. ("[I]t is necessary to consider 'the reality of the circumstances,'-in other words, common sense-in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor." (quoting In re Wood, 599 F.2d 1032, 1036 (C.C.P.A. 1979))). Kahn, 441 F.3d at 986-87. See also In re Clay, 966 F.2d 656, 659 (Fed. Cir. 1992) ("[a] reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem.").

In view of KSR's holding that "any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed," 127 S. Ct. at 1742 (emphasis added), it is clear that the second part of the analogous-art test as stated in Clay, supra, must be expanded to require a determination of whether the reference, even though it may be in a different field from that of the inventor's endeavor, is one which, because of the matter with which it deals, logically would have commended itself to an artisan's (not necessarily the inventor's) attention in considering any need or problem known in the field of endeavor. Furthermore, although under KSR it is not always necessary to identify a known need or problem as a motivation for modifying or combining the prior art, it is nevertheless always necessary that the prior art relied on to prove obviousness be analogous. See KSR, 127 S. Ct. at 1739. ("The Court [in United States v. Adams, 383 U.S. 39, 40 (1966)] recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known

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in the field, the combination must do more than yield a predictable result.") (emphasis added). See also Sakraida, 425 U.S. 273,280 (1976)

In this case, prior art of reference Iliff is directed to computerized medical diagnostic system", particularly, "MDATA" system defining various objects related to "medical diagnostic and treatment", further MDATA system specifically supports user interaction specifically between doctor and patient [Abstract, col 4, line 5-11], further Iliff also specifically teaches "MDATA" software written in Microsoft C/C++ version ie. using "structured programming techniques" supported by algorithm process [col 8, line 46-50]. It is also noted that Iliff strongly supports and developed based on "international classification of Diseases codes" [col 13, line 6-8], further MDAtA system's algorithms execution based on "medical history", "patient's responses", particularly supports user interaction question and answer types with multiple-choice questions [col 14, line 57-67] as stated above, Iliff specifically directed to diagnoses and symptoms, each diagnosis associated with symptoms in MDATA system, lines 24-35 in col. 12, lines 38-45 in col. 21, and line 24 in Col. 35 thru line 49 in col. 42, the MDATA system is written in object-oriented program language, such as C++, lines 7-16 in col. 14, therefore teaching object. Iliff also teaches MDATA system supports object oriented language such as C++ related to patient's medical records and/objects, further combining data and functions into a single unit called class is integral part of C++ programming because Iliff specifically teaches MDATA system including defining various software modules as detailed in col 8, line 49-67) .

In this case prior art of reference Gray is directed to “medical diagnostic system”, more specifically, processing, recommending diagnostic tasks based on possible diagnostic task [Abstract], Gray also strongly teaches “executing diagnostic enhancement program for example as detailed in fig 2, element 142. It is also noted that Gray supports user interface particularly presenting “medical problem” such as patient data including “symptoms”, outputting possible diagnoses recommendations for example as detailed in col 3, line 43-65, col 9, line 42-55]

It is however, noted that Iliff does not explicitly disclose a preferred weight and an alternative weight. On the other hand, Gray discloses a plurality of disease associated with a plurality of symptoms in a medical diagnostic enhancement system (lines 7-24 in col. 6 and line 23 in col. 2 thru line 41 in col. 3). Gray also discloses assigning a weight for each symptom, wherein a particular disease includes a preferred weight for one or more preferred symptoms and an alternative weight for one or more alternative symptoms, wherein the alternative symptoms for a particular preferred symptom are selected from a set of symptoms (lines 25-48 in col. 6).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate diagnostic enhancement tasks particularly patient data for possible diagnoses of Gray into computerized medical diagnostic particularly user's changing condition over time of Iliff because both Iliff, Gray specifically directed to medical diagnostic system [Iliff: Abstract; Gray: Abstract], particularly in a object oriented environment [Iliff: col 8, line 46-55; Gray: col 3, line 10-16] and they both are from same field of endeavor; Because both Iliff and Gray teach

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medical diagnostic and treatment advice, it would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to substitute and/or modify one method for the other to achieve the predictable result of extracting specific diagnosis's and symptom conditions, further able to present an accurate diagnosis to the patient to treat condition[s] [Gray: Abstract, col 4, line 31-39]

Therefore, Applicant's remarks are deemed not to be persuasive, and claims 1, 3-5, 10-13, 15-19, 43-48, 52-53 and 56 stand rejected under 35 USC 103(a) as being unpatentable over Iliff in view of Gray

### ***Conclusion***

#### **The prior art made of record**

- |    |                |         |
|----|----------------|---------|
| a. | US Patent. No. | 5868669 |
| b. | US Patent.No.  | 6149585 |

66. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is 571-272-4108. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim, Charles, can be reached on (571) 272-7421. The fax phone numbers for the organization where the application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

/Srirama Channavajjala/  
Primary Examiner, Art Unit 2157.